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ABSTRACT

With schools being held accountable for helping students achieve state standards, and assessments measuring how well schools and students are meeting standards, the types and uses of data become increasingly important. This brief outlines a study conducted by the Education Commission of the States to understand how exemplary districts use data. The study looked at six school districts in California, Colorado, Iowa, Maryland, and Texas. The study found that the types of data collected determined the types of decisions that school board members, principals, and teachers could make. In the exemplary districts, the study found, data were used to: (1) track student achievement; (2) change teachers' attitudes about the potential success of low-performing students; (3) guide teachers' professional development; (4) link appropriate interventions to results; (5) create school-improvement plans; and (6) decide on resource allocations. The report goes on to describe ways exemplary districts and schools support data use, and how technology will continue to make data use more prevalent and more effective for decisionmaking. This brief is one in a series of ECS reports examining the impact of the No Child Left Behind education act on state policy and policymaking. (WFA)

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Education Commission of the States

No Child Left Behind Issue Brief

Data-Driven Decisionmaking

This is part of a series of ECS reports examining the impact of No Child Left Behind (NCLB), the newly revised Elementary and Secondary Education Act on state policy and policymaking.

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Introduction

Nearly every state reports annually to districts on how well their schools and students are meeting state standards. With schools being held accountable for helping all children achieve state standards, and assessment data measuring how well schools and students are meeting those standards, the question is: How can districts support schools' use of data, and what types of data can be used to make decisions that improve student and school performance?

The Education Commission of the States (ECS) conducted a study to understand how exemplary districts use data. Staff studied six school districts in five states (California, Colorado, Iowa, Maryland and Texas). Although these districts varied in size, most were low-income, had high student mobility and had been struggling with low student achievement for several years. State accountability results indicated where these districts stood on student achievement in relationship to other districts in the state. Typically, states set goals for improvement based on this information. These comparisons and goals helped districts more clearly identify their strengths and weaknesses, a vital ingredient in efforts to improve teaching and learning.

Types of Data Districts Collected

The types of data collected determined the types of decisions that school board members, principals and teachers could make. Districts collected three primary types of data and sporadically collected a fourth data type – perception or attitudinal data:

- **Demographic** data include background information on students, staff and schools, such as gender, ethnicity, identification number, number of years in the district, attendance, teacher certification and school enrollment.
- **Achievement** data include student results on state assessments, district tests and teacher-developed tests.
- **Instructional** processes include information about the curriculum, interventions the student experienced, the teachers students were taught by and so on.
- **Perception** data include individual views, values and beliefs about systems where people work and learn, and may be gathered through questionnaires, interviews and observations.

When these types of data are combined, various questions can be answered. For example, by using information on the instructional processes students experience, school board members can determine which programs or instructional strategies are working (or not working) for which students, and whether additional programs are needed.[1]

Tracking Student Achievement for Diagnosis and Placement

Exemplary districts use varying strategies to track student achievement and act quickly on the results. An Iowa district, for instance, uses a Web-based test in three content areas to diagnose and place students. These tests are administered and scored online, providing student achievement results at the end of the testing session. All students are tested in the fall and spring in reading, mathematics and science to determine their learning gains. The test results are also used to predict students' ability to earn the district's Basic Academic Skills Certificate by 10th grade, a graduation requirement. The district calculates the test scores for each grade level, ensuring students stay on track for earning the certificate. For example, in reading, a 3rd-grade student needs a score of about 197 and a 6th-grade student needs a score of 217 to reach the passing score of 230 required to earn the certificate.

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Data-Driven Decisionmaking (cont'd)

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For more information on the issues discussed in this *Issue Brief*, please visit the ECS Web site at: http://www.ecs.org.

In addition, the district's schools use these achievement targets to identify interventions and assign students to classes. Every student has an Individual Pupil Profile containing his or her test scores and recommended learning plan. The district offers an array of extra learning opportunities for students, including summer school, an extended-day program, differentiated instruction and an in-school "Success Center." Students can be reassigned to different classes at the end of each semester as they progress. Schools provide students who earn test scores above grade-level achievement targets with enrichment and accelerated classes. Elementary school students, for example, have the opportunity to go to the middle school to take mathematics, middle school students can take high school classes, and high school students can go to the community college to earn college credit while still in high school.

Changing Beliefs and Attitudes That All Children Can Learn

Comparisons of school results with "beat-the-odds" schools help to change teachers' attitudes about the potential success of low-performing students. Many states report results to districts and schools in terms of how they do against a standard, as well as how their results compare to schools with similar demographics. For example, on its Web site, Just for the Kids (JFTK) (www.just4kids.org) compares every elementary and middle school's results on a state assessment, including 10 of the highest-achieving schools in the state of Texas that are "like them" demographically.[2] Teachers can see that other schools and teachers are helping students like theirs learn at higher levels.

Guiding Teachers' Professional Development

Several districts use student test scores to support teachers' professional development. For example, one district that tracks student progress on benchmarked objectives every six weeks also uses the results to monitor teaching strategies. If many students in a class miss a specific objective, the principal requests professional development for the teacher from another teacher who successfully taught that objective, a content resource teacher or the district's professional development staff.

Interventions and Curricular Decisions

The most difficult aspect of using data is linking an appropriate intervention to results. An "intervention" is a research-based program or action that a district, school or teacher takes to get better results. Districts that are most successful in implementing interventions have active central-office curriculum staff that identify promising practices and link these to schools. For example, a California district invites school leaders to the central office for an introduction to particularly effective programs such as a new reading program for the elementary grades. If a school wants to pilot the program, the district provides training and additional resources.

One of the most important actions schools and districts take regarding new interventions is to collect data on them to see how well they are working to raise student achievement. For example, one district used student achievement data to evaluate its reading program in the elementary school. Reading scores had declined steadily for several years, and district administrators attributed the decline to an influx of new students into the district. But when they looked at the data, they found that students in the district for more than three years accounted for the decline in scores. This prompted district leaders to identify and invest in a new reading program.

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Data-Driven Decisionmaking (cont'd)

Using Data To Create School Improvement Plans and Assess Progress

Almost every exemplary district uses its school data to inform and create school improvement plans. Such plans are often required by the state and sometimes by the district, but in all cases they help educators focus their attention on student learning. School improvement plans serve the purpose of identifying areas for improvement, selecting interventions or new approaches, and collecting data to see how well they were doing. By analyzing the school's demographic, achievement and instructional data and matching them to the goals, the plan's effectiveness can be evaluated.

The school improvement planning process has additional benefits – it engages an entire team of staff in the data analysis, provides time and resources to plan, and highlights areas in which improvement is needed (for example, mathematics or reading).

Allocating District Resources

Some districts use their school and district information to decide on resource allocations. For example, a Maryland district provided business managers to every high school principal to give them more focused time on instructional leadership, rather than managerial tasks. Principals spent time reviewing data with teachers, observing lessons and making decisions on intervention strategies. This same district also redirected resources into more instructional staff at the district and school levels by hiring instructional directors, program coordinators, and resource and mentor teachers. These decisions also applied to other forms of staff. For example, if one school was struggling with student disciplinary problems and another was not, teacher aide resources would be redirected to the school with more disciplinary challenges.

How Districts Support Data Use

Districts support data use in various ways:

Stable District Leadership that Modeled Data Use – Superintendents and board members know how to lead and support data use in the district. They capitalize on central-office staff skills and provide latitude and support for these key staff. District leaders model data use at every opportunity by requesting data and making decisions based on data. These districts also have used data for many years. Most important, leadership in these districts is stable, free of conflict and supportive of data use.

Partnerships for Additional Support – Districts create meaningful and often reciprocal external partnerships – to obtain reduced-cost software and hardware, secure technical assistance on data analysis, and identify effective intervention, including participation in school reform networks. One California district collaborated with technology software and hardware firms, obtaining products at a reduced cost in return for sharing with these companies how their products could be used in an education setting.

Change-Management Strategies – Districts use sophisticated change-management strategies over time to engage principals, teachers and staff in using data, developing more sophisticated instructional strategies and using technology. Most districts have a long-term plan for technology, hardware and software implementation. For example, one California district has a growing reputation for its technology infrastructure and use of technology for instructional purposes. This district also has a five-year plan to train all teachers in using technology effectively.

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Data-Driven Decisionmaking (cont'd)

Endnotes

1 For an explanation of data types, see Victoria Bernhardt (1999). *The School Portfolio: A Comprehensive Framework for School Improvement.* Larchmont, NY: Eye on Education.

2 Just for the Kids (2000). *Promising Practices: How High-Performing Schools in Texas Get Results.* Austin: Just for the Kids.

3 Armstrong, Jane, and Anthes, Katy (2001). *Identifying the Factors, Conditions and Policies That Support Schools' Use of Data for Decisionmaking and School Improvement.* Denver, CO: Education Commission of the States.

4 Palaich, Robert, et al (2000). *Smart Desktops for Teachers.* Denver, CO: Education Commission of the States.

Linking Effective Interventions to Schools – The central office has a strong role in identifying promising practices and interventions, as well as the ability to link these to schools. For example, one California district's superintendent or assistant superintendent met with every principal, presenting their "school-on-a-page" data. They jointly set achievement targets, and the superintendent offered district support for meeting the targets. This district did an excellent job of identifying promising practices and curricula, and offering this information to schools. It was up to the principals and staff to take advantage of these central-office services.

Securing Additional Resources – Most districts are highly entrepreneurial in identifying, securing and wisely using additional resources for data collection and student intervention based on data. These districts, for example, compete for as many grants as they can. In Texas, the district used grant resources to hire a staff person in every school who served two functions – data collector and master teacher – to provide additional instruction for both students and teachers. This same district had district curriculum specialists in each core subject area at the elementary, middle and high school levels to serve as resource experts to teachers, especially in low-performing schools. Almost all districts have several staff assigned as liaisons to individual schools and principals. Each school meets with someone from the district office monthly to go over the school's data or progress on the school improvement plan.

How Schools Support Data Use

Schools successful in using data to support decisionmaking and improvement use the district resources available to them, create a school structure where data use is embedded in the daily schedule, and use staff expertise to continually develop data analysis skills. Other school factors include: strong principal support and leadership; ongoing use and analysis of timely, student-level data; expert assistance in data use and instructional strategies; interventions to improve teaching and learning; school improvement plans and teams; and professional development opportunities for teachers. For additional information on how schools support data use, see the summary on the ECS Web site (www.ecs.org/clearinghouse/30/69/3069.htm).[3]

The Future of Districts' Data Use

Existing and emerging technology will continue to make data use both more prevalent and more effective for decisionmaking and improvement. A report from ECS, *Smart Desktops for Teachers,*[4] details some innovations that will change the use of data by districts and schools.

A "smart desktop" is a computer that a teacher has at his/her desk that links a new generation of products and services aimed at integrating technology into the core elements of teaching and learning. Teachers can use electronic gradebooks, diagnostic testing and prescriptive instruction to monitor and modify student progress. They store, share and modify lesson plans and resources, as well as capitalize on techniques for quickly interpreting data and modifying teaching strategies. Smart-desktop technology offers new means for gathering and analyzing data within the classroom, throughout the school and across districts. Teachers can now ask previously unanswerable questions about what works to enhance student achievement. Smart-desktop applications offer "real-time" means for teachers to assess and respond to student needs.

Effective use of data by educators and their community will change how they respond to accountability demands. When timely and useful data are available to educators, and effective interventions are at their fingertips, the focus of accountability can move toward "fixing the problem" rather than "fixing the blame."

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